

REMARKS

In the Office Action, the Examiner rejected claims 26-33 under 35 USC §103 and indicated that claims 1-9, 11-12, 14-25, and 34-36 are allowed. The claim rejections are fully traversed below.

The claims have been amended to further clarify the subject matter regarded as the invention. Claims 1-9, 11-12, and 14-36 remain pending.

Reconsideration of the application is respectfully requested based on the following remarks.

REJECTION OF CLAIMS 26-33 UNDER 35 USC §103

In the Office Action, the Examiner rejected claims 26-33 under 35 USC §103(a) as being unpatentable over Malkin in view of “Mobile IP: Design Principles and practices,” (‘Mobile IP’ hereinafter). Applicant respectfully traverses these rejections.

Malkin discloses methods and apparatus for transparently providing mobile network functionality. See title. Malkin requires that the node be authenticated by sending an authentication request to an authentication server residing at the home network. The service provider establishes, on behalf of the remote node, a remote connection between the remote node and the home network to enable packets to be transferred between the remote node and the home network. See Abstract. Thereafter, open communication is available between the remote node and its home network using the GRE and the Mobile IP protocol. See col. 5, lines 43-46.

Claims 26-33 recite the use of a sequence number, or relate to determining or identifying (e.g., in a packet or data structure) whether a registration is an initial registration or a subsequent registration, or determining whether to accept a registration (e.g., independent claim 28). The general purpose of the sequence number in the pending claims is to ascertain whether the registration is an initial registration of the node with the Home Agent (e.g., when the sequence number is zero) or whether the registration is a re-registration of the node. See page 20, line 1- page 21, line 23 of Applicant's specification, for example.

The Examiner admits that Malkin fails to disclose such a feature, and seeks to cure the deficiencies of Malkin with Mobile IP, page 50, Section 3.5.2. However, page 50, section 3.5.2 of Mobile IP merely discloses the use of a sequence number in an agent advertisement. The sequence number of Mobile IP in no manner suggests the number of registrations that have been performed on behalf of a particular node, but rather the number of advertisements that have been transmitted by the agent. An agent advertisement is known in the art to be transmitted by agents such as Foreign Agents, and is entirely different from registration request and reply packets. Mobile IP neither discloses nor suggests the use of a sequence number in a registration request or reply packet.

Moreover, Mobile IP neither discloses nor suggests ascertaining whether a registration is an initial or subsequent registration via a sequence number or any other mechanism. In fact, Mobile IP indicates that when the Foreign Agent reboots and reinitializes its sequence numbers starting from 0, the Mobile Node should re-register. Each subsequent advertisement is required to use the number 0 for its first advertisement. The number of advertisements sent by a Foreign Agent and the number of registrations performed on behalf of a node are entirely unrelated. As such, the combination of the cited references would fail to achieve the desired result.

It is also important to note that Mobile IP discloses that Mobile Nodes can distinguish reductions in sequence numbers that result from reboots, from reductions that result in rollover

of the sequence number after it attains the value 65,535. However, as set forth in the pending claims, the Foreign Agent performs proxy registration on behalf of a node that does not support mobility (e.g., Mobile IP). Since the node does not support Mobile IP, the agent advertisements would not be processed by the node. Since Mobile IP assumes that the node is a Mobile Node, Mobile IP teaches away from performing the claimed invention to support mobility for a node that does not support mobility.

As set forth on pages 16-17 of Applicant's specification, once a PPP node is registered with its Home Agent via a proxy registration process, it may roam to another Foreign Agent. This second Foreign Agent may send a registration request packet on behalf of the node, thereby registering the node with its Home Agent. However, since the node has not itself initiated this second registration (and therefore has not de-registered), the first Foreign Agent may be unaware that the node has roamed to a new location within the network. More particularly, PPP may be in a dormant state, which prevents the first Foreign Agent from learning that the node has moved to another Foreign Agent. As a result, the first Foreign Agent may try to re-register when the lifetime of the first registration expires. In order to solve this problem, the present invention distinguishes between an initial registration by a Foreign Agent on behalf of the node and a subsequent "re-registration" by the Foreign Agent on behalf of the node. Neither of the cited references, separately or in combination, discloses or suggests the problem solved by the claimed invention or a solution to this problem. Accordingly, Applicant respectfully asserts that claims 26-33 are patentable over the cited references.

With respect to independent claim 26, claim 26 recites:

In a Home Agent supporting Mobile IP, a method of processing a registration request packet composed on behalf of a node that supports the Point-to-Point Protocol, comprising:

receiving the registration request packet from a Foreign Agent that is performing proxy registration on behalf of the node, the registration request packet including a registration

indicator indicating whether registration being performed by the Foreign Agent on behalf of the node is a re-registration by the Foreign Agent or an initial registration by the Foreign Agent;

determining from the registration indicator whether to accept registration of the node with the Home Agent;

composing a registration reply packet indicating whether registration of the node with the Home Agent is accepted; and

sending the registration reply packet to the Foreign Agent.

The Examiner admits that Malkin fails to disclose “receiving the registration request packet from a Foreign Agent that is performing proxy registration on behalf of the node, the registration request packet including a registration indicator indicating whether registration being performed by the Foreign Agent on behalf of the node is a re-registration by the Foreign Agent or an initial registration by the Foreign Agent.”

The Examiner seeks to cure the deficiencies of the primary reference with Mobile IP, citing page 50, section 3.5.2 of Mobile IP. However, Applicant notes that this portion of Mobile IP discusses agent advertisements transmitted by the Foreign Agent, not a registration request packet transmitted by the Foreign Agent on behalf of a node. These are two entirely different types of messages sent for entirely different purposes. As such, the combination of the cited references would fail to achieve the desired result. Moreover, neither of the cited references, separately or in combination, discloses or suggests indicating whether a registration is an initial registration or re-registration on behalf of a node in a registration request packet. Accordingly, the combination of the cited references would fail to achieve the desired result.

Claim 28 recites, in part:

“receiving the registration request packet from a Foreign Agent that is performing proxy registration on behalf of the node, the registration request packet including a sequence number

indicating an order within a sequence of one or more registrations performed by one or more Foreign Agents on behalf of the node;

determining from the sequence number whether to accept registration of the node with the Home Agent;”

It is important to note that the sequence number indicates an order within a sequence of one or more registrations performed by one or more Foreign Agents on behalf of the node. Thus, the same sequence number may be used across multiple Foreign Agents (e.g., by providing the sequence number in a mobility binding table as set forth in claim 31). In this manner, an alternate solution to the problem set forth above may be implemented. As set forth above, neither the problem nor the claimed solution to the problem are disclosed or suggested by the cited art.

Moreover, the use of sequence numbers in the manner claimed (e.g., in a registration request packet) is neither disclosed nor suggested by the cited art. For instance, with respect to claims 32 and 33, the use of sequence numbers to authenticate a node is novel and non-obvious. More particularly, determining whether a sequence number in a registration request packet is the same or different from that in a mobility binding table is neither disclosed nor suggested by the cited references.

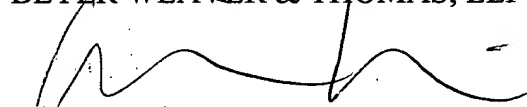
The Examiner asserts that a digital or online request to register as a patent attorney or agent or for the patent bar would read upon the sequenced “registration request packet.” However, it is important to note that a USPTO patent agent/registration number is not used during the registration process to determine whether to register the patent attorney or agent, but is assigned after a decision to register the patent attorney or agent has already been made. As such, the USPTO patent agent/registration number teaches away from the claimed invention.

If there are any issues remaining which the Examiner believes could be resolved through either a Supplemental Response or an Examiner's Amendment, the Examiner is respectfully requested to contact the undersigned attorney at the telephone number listed below.

Applicants hereby petition for an extension of time which may be required to maintain the pendency of this case, and any required fee for such extension or any further fee required in connection with the filing of this Amendment is to be charged to Deposit Account No. 50-0388 (Order No. CISC137).

Respectfully submitted,

BEYER WEAVER & THOMAS, LLP

A handwritten signature in black ink, appearing to read 'Elise R. Heilbrunn', written over the firm name.

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